PAH/ACE A

California Regional Water Quality Control Board

Santa Ana Region

Alan C. Lloyd
Secretary for Environmental Protection

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Arnold Schwarzenegger
Governor

January 5, 2005

Mr. Jerry Dunaway
BRAC Environmental Coordinator
BRAC Program Management Office West
1230 Columbia Street, Suite 1100
San Diego, CA 92101

SUBJECT: **CLOSURE OF UNDERGROUND STORAGE TANK (UST) CASE**
UST 90
CROSS STREET AND COPELAND STREET, FORMER U.S. MARINE CORPS AIR STATION, TUSTIN
CASE NO. 083003905T

Dear Mr. Dunaway:

This letter confirms the completion of the site investigation, remedial action and groundwater investigation which were required to mitigate the releases from the underground storage tank formerly located at the above described location. Enclosed is the Case Closure Summary for the referenced site for your records.

The underground storage tank was removed in 1993. Petroleum discolored soil was observed in the excavation. Groundwater was encountered at 10 feet below ground surface (bgs). The excavation was backfilled with pea gravel and the excavated soil.

Four soil borings were drilled and soil and groundwater samples were collected. Groundwater samples were collected from depths between 16.5 and 19.5 feet bgs. Strong hydrocarbon odor and black stained soil was encountered at approximately 8 feet bgs in soil boring 90-B2. Total petroleum hydrocarbons (TPH) diesel was detected in the soil and groundwater. Very low concentrations of benzene and toluene were detected in the groundwater.

Phase I
Between February and June 2000, 1,048 tons of TPH contaminated soil were excavated and transported to the onsite thermal desorption unit for treatment. Groundwater was encountered during excavation activities and was pumped out and treated at the onsite granular activated carbon treatment system. Soil samples were collected from the sidewalls and the bottom of the excavation. Elevated concentrations of TPH diesel were detected in the soil samples collected from the sidewalls. Additional soil was removed. TPH contaminated soil was left in place along the eastern wall due to the proximity of Building 90.

Three soil borings were drilled along the western edge of Building 90 and TPH diesel was detected in two of the soil borings between 8 and 12 feet bgs.

In June 2000, contaminated soil was removed from the eastern wall of the excavation and treated at the thermal desorption unit. A soil sample was collected from the eastern sidewall at 13 feet bgs and the analytical results showed a TPH concentration of 5,300 milligrams per kilogram (mg/kg). TPH contaminated soil was again left in place along the eastern wall due to the proximity of Building 90. The excavation was backfilled with treated soil and non-impacted overburden soil.

Phase 2
In March 2004, 140 tons of TPH contaminated soil were excavated from the area adjacent to Building 90. TPH diesel was detected in two of the soil samples collected from the eastern sidewall. The excavation was backfilled with treated soil and non-impacted overburden soil.

Two direct push slant borings were advanced adjacent to Building 90 to determine the extent of TPH contaminated soil under the building. Soil samples were collected at 10 and 15 feet bgs. Low concentrations of TPH diesel were detected in the soil samples from 10 feet bgs; TPH was not detected in the samples from 15 feet bgs.

Groundwater samples were collected from three locations. The analytical results of the water samples were: TPH diesel ranged from 0.074 to 0.41 milligrams/liter (mg/l); toluene from 1.3 to 2.1 micrograms/liter (µg/l); and 37 µg/l of trichloroethylene (TCE) was detected in one sample. Benzene, ethylbenzene, xylenes and methyl tertiary butyl ether were not detected in the groundwater samples. The TCE is from site IRP 12 located near Building 90.

Based on the information provided in the September 14, 2004 Draft Site Closure Report, Underground Storage Tank 90, and additional information which we received on December 16, 2004, in consideration of the current land use, and with the provision that the information provided to this agency was accurate and representative of site conditions, no further action related to the underground storage tank release is required.

This notice is issued pursuant to a regulation contained in Title 23, California Code of Regulations, Division 3, Chapter 16, Section 2721 (e).

Please telephone Patricia Hannon at (951) 782-4498, or send e-mail to phannon@waterboards.ca.gov if you have any questions regarding this matter.

Sincerely,

Gerard J. Thibeault
Executive Officer

Attachment: Case Closure Summary

cc w/attachment: Ms. Deanna Dunbar, Southwest Division, Naval Facilities Engineering Command
Mr. Anantaraman (Ram) Peddada, Dept. of Toxic Substances Control
Mr. James Ricks, U. S. EPA, Region IX
Ms. Arghavan Rashidi –Fard, Orange County Health Care Agency
Mr. Dana Ogdon, City of Tustin
Ms. Linda Dorn, Clean Water Programs, State Water Resources Control Board

CASE CLOSURE SUMMARY
Leaking Underground Fuel Tank Program

I. Agency Information

DATE: 12/24/04

AGENCY NAME	California Regional Water Quality Control Board - Santa Ana Region	STAFF	Patricia Hannon
ADDRESS	3737 Main St. Suite 500	TITLE	Engineering Geologist
CITY/STATE/ ZIP	Riverside CA 92501-3348	PHONE	(951) 782-4498, main #(951) 782-4130

II. Case Information

SITE NAME	UST 90		
LOCATION	Cross Street and Copeland Street, Former U. S. Marine Corps Air Station, Tustin		
REGIONAL BOARD CASE #	083003905T	LOCAL AGENCY CASE #	NA

RESPONSIBLE PARTIES	ADDRESS	PHONE NUMBER
Attn: Jerry Dunaway Southwest Division Naval Facilities Engineering Control	1220 Pacific Hwy San Diego CA 92132-5190	619-532-0975

TANK NO.	SIZE IN GALLONS	CONTENTS	CLOSED IN PLACE/ REMOVED	DATE
UST 90	500	Fuel oil	Removed	06/03/1993

III. Release and Site Characterization Information

SITE CHARACTERIZATION COMPLETE?	yes						
MONITORING WELLS INSTALLED?	no	NUMBER	na	PROPER SCREEN INTERVAL?	na		
DEEPEST GW DEPTH	19 feet			SHALLOWEST GW DEPTH	7.5 feet		
GROUNDWATER, MOST SENSITIVE CURRENT USE:	municipal			GW FLOW DIRECTION	South-southeast		
DRINKING WATER WELL(S) AFFECTED?	no	AQUIFER NAME		Irvine Pressure			
IS SURFACE WATER AFFECTED?	no	NEAREST SURFACE WATER		Santa Ana-Santa Fe Channel			
OFF-SITE BENEFICIAL USE IMPACTS (ADDRESSES/LOCATIONS):	none						
REPORT(S) ON FILE?	yes	WHERE IS/ARE REPORT(S) FILED?	R.W.Q.C.B. - Santa Ana Region				

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

MATERIAL	AMOUNT	ACTION (TREATMENT, DISPOSAL)/ DESTINATION	DATE
TANK/PIPING	500 gal. UST and piping	unknown	June 3, 1993
FREE PRODUCT	none		
SOIL	1,490 tons	Treated at the onsite thermal desorption unit	Feb. – June 2000
	140 tons	Treated at the off site thermal desorption unit	March 2004
GROUNDWATER		Treated at onsite granular activated carbon groundwater treatment system	Feb. – June 2000

II. Release and Site Characterization Information (Continued)

CONTAMINANT	SOIL (mg/kg)		WATER (µg/L)	
	INITIAL	CURRENT	INITIAL	CURRENT
BENZENE	ND (0.005)	<0.0063	0.3	<5
TOLUENE	ND (0.005)	<0.0063	0.7	2.1
ETHYLBENZENE	0.11	<0.0063	ND (0.5)	<5
XYLENE	0.3	<0.0063	ND (1.0)	<5
MTBE	NA	<0.013	NA	<10
TPH – fuel oil	5,600	NA	NA	NA
TPH - D	4,200	3,200	2800	410
Lead	7	NA	NA	NA
Trichloroethylene	NA	0.012	NA	37

COMMENTS REGARDING INVESTIGATION AND REMEDIATION

An underground storage tank was removed in 1993. Petroleum stained soil was found. The tank and piping were described as very corroded with many holes. Groundwater was encountered at 10 feet below ground surface (bgs). The excavation was backfilled with pea gravel and the excavated soil.

Four soil borings were drilled to depths between 15.5 and 19.5 feet bgs. Soil and groundwater samples were collected. Groundwater samples were collected at between 16.5 and 19.5 feet bgs. Strong hydrocarbon odor and black stained soil was encountered at approximately 8 feet bgs in soil boring 90-B2. The total petroleum hydrocarbons (TPH) as diesel concentrations detected in the soil ranged from 2,100 to 4,200 milligrams/kilogram (mg/kg). The TPH diesel detected in the groundwater ranged from 91 to 2,800 microgram/liter (µg/l). Very low concentrations of benzene and toluene were detected in the groundwater.

Phase I
Between February and June 2000, 1,048 tons of TPH contaminated soil were excavated and transported to the onsite thermal desorption unit for treatment. The resulting excavation was 60 feet wide and 60 feet long and ranged from 10 to 17 feet in depth. Groundwater was encountered during excavation and was pumped out and treated at the onsite granular activated carbon treatment. Soil samples were collected from the sidewalls and the bottom of the excavation. Analytical results of the sidewall samples showed the TPH diesel ranging from non-detect to 12,000 mg/kg. Additional soil was removed. The maximum TPH detected in the bottom soil samples collected was 1,700 mg/kg. TPH contaminated soil was left in place along the eastern wall due to the proximity of Building 90.

Three soil borings were drilled along the western edge of Building 90. TPH was detected at concentrations from 1,000 to 1,700 mg/kg in two of the soil borings, in samples taken between 8 and 12 feet bgs.

In June 2000, approximately 442 tons of contaminated soil were removed from the eastern wall of the excavation and treated at the thermal desorption unit. A soil sample was collected from the eastern sidewall at 13 feet bgs, and the analytical results showed a TPH concentration of 5,300 mg/kg. TPH contaminated soil was again left in place along the eastern wall, due to the proximity of Building 90. The excavation was backfilled with treated soil and non-impacted overburden soil.

Phase 2
In March 2004, 140 tons of TPH contaminated soil were excavated from the area adjacent to Building 90. The excavation was 10 feet wide by 40 feet long, and between 8 and 14 feet deep. Soil samples were collected from the sidewall at depths of 7 to 13 feet bgs. TPH diesel was detected in two of the soil samples at concentrations of 1,400 and 3,200 mg/kg. The excavation was backfilled with treated soil and non-impacted overburden soil.

Two direct-push slant borings were advanced at an angle of 60° from the surface adjacent to Building 90, to determine the extent of TPH contaminated soil under the building. Soil samples were collected at 10 and 15 feet bgs. Low concentrations of TPH diesel were detected in the soil samples from 10 feet bgs. TPH was not detected in the samples from 15 feet bgs.

(Continued on next page)

IV. Closure

DOES COMPLETED CORRECTIVE ACTION PROTECT *EXISTING* BENEFICIAL USES PER REGIONAL BOARD BASIN PLAN?				yes	
DOES COMPLETED CORRECTIVE ACTION PROTECT *POTENTIAL* BENEFICIAL USES PER THE REGIONAL BOARD BASIN PLAN?				yes	
MONITORING WELLS	none	NUMBER DECOMMISSIONED	none	NUMBER RETAINED	none
LIST ENFORCEMENT ACTIONS TAKEN	none				
LIST ENFORCEMENT ACTIONS RESCINDED	none				

V. Regional Board Representative Data

STAFF	Patricia Hannon	TITLE	Engineering Geologist
SIGNATURE	Patricia A Hannon	DATE	12/24/04
SUPERVISOR	Robert Holub	TITLE	Supervising WRC Engineer
SIGNATURE		DATE	

VI. Additional Comments, Data etc.

Groundwater samples were collected from three locations with a *Hydropunch* sampler. The analytical results of the water samples: TPH diesel ranged from 0.074 to 0.41 mg/l, toluene ranged from 1.3 to 2.1µg/l and 37 µg/l of trichloroethylene (TCE) was detected in one sample. Benzene, ethylbenzene, xylenes and methyl tertiary butyl ether were not detected in the groundwater samples. The TCE is from site IRP 12 located near Building 90.

Based on the information provided in the May 1995, Supplemental Final Remedial Action Work Plan, Soil Removal Action Various Underground Storage Tank Sites - MCAS Tustin, and the September 14, 2004, Draft Site Closure Report, Underground Storage Tank 90 and responses to comments received December 16, 2004, this site is no longer considered a continuing threat to water quality and is recommended for closure.